



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,669	06/29/2001	Gunhee Jang	P20978	9360

7055 7590 04/25/2002

GREENBLUM & BERNSTEIN, P.L.C.
1941 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER

ELKASSABGI, HEBA

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,669

Applicant(s)

JANG ET AL.

Examiner

Heba Elkassabgi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/04/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 February 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The corrected or substitute drawings were received on 02/04/2002. These drawings are accepted.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the housing" in line 5. In which the drawing clearly shows that the jaw portion is located on the shaft not the housing. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunfield et al. U.S. Patent 5694268 and further in view of Aimiya U.S. Patent 5416655 and Sakuragi et al. U.S. Patent 5598047 and Takemura et al. U.S. Patent 5880545.

Dunfield et al. Discloses in Figure 6 a spindle motor with a hub (154) with an inner protruding portion (AA) along the central portion of the inner circumferential side of the hub, with the inner protruding portion (AA) inserted between the lower ball bearing (162) and the upper ball bearing (160). Also, Dunfield divulges a permanent magnet (166) that is attached to the lower side of the outer circumferential side of the outer protruding portion (BB) of the hub (154). Though, Dunfield et al. does not disclose a base plate having a housing with a fixed shaft in the upper central portion of the housing, a stator bonded to the upper portion of the inner circumferential face of the circular hole; a lower and upper ball bearing fixed to the outer circumferential face of the fixed shaft; an outer protruding portion along the an upper side of the outer circumferential face of the hub; and disk that is mounted on to the upper face of the inner protruding portion of the hub with a clamp that is fixed to the hub by a bolt.

Aimiya discloses in Figure 1 a base plate (5) with a circular hole with a housing (11) fixed into the base plate (5) and an outer protruding portion (CC) at the upper side of the of the outer circumferential face of the hub (15), for the purpose of is to design a magnetic disk apparatus wherein spaces near the cover are effectively utilized.

Sakuragi et al. discloses in Figure 15 a stationary shaft (1) that is formed with the housing at an upper central portion (DD) of the housing (EE) and a clamp (37) that is fixed to the hub (2) by a bolt (39); for the purpose of reducing the high frequency electromagnetic noise to the magnetic disk

Takemura et al. discloses in Figure 14 a disk (214) mounted to the upper face of the outer protruding portion (212) of the hub (210) and a stator (203) fixed to the upper inner circumferential face of the circular hole with a lower ball bearing (251) and an upper ball bearing (208) bonded to the lower and upper side of an outer circumferential face of a fixed shaft (205); for the purpose of providing a simple structure that does not take up much space in resulting in a smaller and highly productive spindle motor.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to modify Dunfield et al. Invention by placing a base plate having a housing with a fixed shaft in the upper central portion of the housing, a stator bonded to the upper portion of the inner circumferential face of the circular hole; a lower and upper ball bearing fixed to the outer circumferential face of the fixed shaft; an outer protruding portion along the an upper side of the outer circumferential face of the hub; and disk that is mounted on to the upper face of the inner protruding portion of the hub with a clamp that is fixed to the hub by a bolt for the purpose of a design a magnetic disk apparatus wherein spaces near the cover are effectively utilized, reducing the high frequency electromagnetic noise to the magnetic disk, and providing a simple structure

that does not take up much space in resulting in a smaller and highly productive spindle motor.

With regards to the claimed invention a one-piece construction, in place of separate elements fastened together, is a design consideration within the skill of the art. In re Kohno, 391 F. 2nd 959, 157 USPQ 275 (CCPA 1968); In re Larson, 340 F.2nd 965, 144 USPQ 347 (CCPA 1965).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. Patent 6071014 and in further view of Dunfield et al. U.S. Patent 5694268 and Aimiya U.S. Patent 5416655 and Sakuragi et al. U.S. Patent 5598047 and Takemura et al. U.S. Patent 5880545.

Lee et al. discloses in Figure 6 a spindle motor in which the a thrust pad (142b) is vertically placed in the fixed shaft (122b) and is mounted on to the jaw portion (FF) of the fixed shaft, with the hub (128b) spaced from a certain interval (the area in which the oil (OL) is located is considered a spacing between the thrust pad and hub) from the thrust pad (142b). Though, Lee does not disclose a spindle motor having a base plate with a central hole to which a housing is fixedly inserted into the circular hole of the base plate with the fixed shaft formed with the housing and a jaw portion of the shaft located at a central portion of the shaft and a stator that is bonded to the inner circumferential face of the base plate, furthermore a hub having an outer and inner protruding portion of the hub at an outer and inner circumferential face of the hub.

Art Unit: 2834

Moreover, a permanent magnet that is located at a lower side of the outer circumferential face of the outer protruding portion of the hub, a disk mounted on to the outer protruding portion and a clamp fixed to the hub with a bolt.

Sakuragi et al. in Figure 15 illustrates a fixed shaft (1) that is formed with the housing at an upper central portion and a clamp (37) that is fixed to the hub (2) by a bolt (39). Furthermore, Sakuragi et al. illustrates in Figure 9 a shaft in which a jaw portion (JP) (which is defined as a side of a pass or channel) at an outer circumferential face of the shaft (1a); for the purpose of reducing the high frequency electromagnetic noise to the magnetic disk.

Takemura et al. discloses in Figure 14 a stator (203) that is bonded to the upper portion of an inner circumferential face of a base plate (201) and a disk (214) that is mounted onto the outer protruding portion (212) of the hub (210); for the purpose of providing a simple structure that does not take up much space in resulting in a smaller and highly productive spindle motor.

Dunfield et al. illustrates in Figure 6 a hub (154) with an outer protruding portion (GG) at an upper side of the outer circumferential face of the hub and an inner protruding portion (HH) at a lower inner circumferential face of the hub. Furthermore Dunfield et al. places a permanent magnet (166) at the lower outer circumferential face

of the outer protruding portion of the hub); for the purpose of dampening the vibration of the stator structure to reduce the generated acoustic noise in the storage device.

Aimiya in Figure 1 discloses a spindle motor with a base plate (5) having a housing (11) that is inserted into the base plate), for the purpose of is to design a magnetic disk apparatus wherein spaces near the cover are effectively utilized.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to modify Lee et al.'s invention by having a spindle motor having a base plate with a central hole to which a housing is fixedly inserted into the circular hole of the base plate with the fixed shaft formed with the housing and a jaw portion of the shaft located at a central portion of the shaft and a stator that is bonded to the inner circumferential face of the base plate, furthermore a hub having an outer and inner protruding portion of the hub at an outer and inner circumferential face of the hub. Moreover, a permanent magnet that is located at a lower side of the outer circumferential face of the outer protruding portion of the hub, a disk mounted on to the outer protruding portion and a clamp fixed to the hub with a bolt; for the purpose of reducing the high frequency electromagnetic noise to the magnetic disk, providing a simple structure that does not take up much space in resulting in a smaller and highly productive spindle motor, dampening the vibration of the stator structure to reduce the generated acoustic noise in the storage device, and to design a magnetic disk apparatus wherein spaces near the cover are effectively utilized.

With regards to the claimed invention a one-piece construction, in place of separate elements fastened together, is a design consideration within the skill of the art. In re Kohno, 391 F. 2nd 959, 157 USPQ 275 (CCPA 1968); In re Larson, 340 F.2nd 965, 144 USPQ 347 (CCPA 1965).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HYE
April 21, 2002


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800